

Application No.: 09/889,269
Amendment Dated November 25, 2003
Reply to Office Action dated: August 25, 2003

Attorney Docket No.: FUK-84

REMARKS

Claims 1 and 2 are pending and rejected in the present application.

Claim 1 is amended hereby. Applicants respectfully submits that no new matter has been introduced as part of this amendment.

Responsive to the objection to claim 1 on the basis of informalities, Applicants have amended claim 1, keeping in mind the comments of the Examiner.

Responsive to the rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,656,099 (Ohmi), Applicants have amended claim 1 and hereby submit that claim 1 is now in condition for allowance.

Claim 1, as amended, recites in part:

...a passivation film consisting of chromium oxide obtained by oxidizing a chromium coat on the metallic material...

Applicants submit that such an invention is neither taught, disclosed, nor suggested by Ohmi '099, or any of the other cited references, alone or in combination.

Ohmi '099 discloses the formation of the oxide passivation film consisting mainly of chromium oxide on the outermost surface of a stainless steel component. Such a passivation film is formed by a formation of a chemically active workstrain layer at the surface of the stainless steel base. Upon exposing such a workstrain layer to a weakly oxidizing atmosphere, a chromium oxide layer thereby generated thereon. Given that the source for chromium for such a chromium oxide layer is via the diffusion of chromium along grain boundaries in the workstrain layer, the microstructure of such a chromium oxide layer inherently must differ from a chromium oxide layer produced via the oxidation of a preformed chromium layer on a stainless steel base, as is the case with the present invention. For one, the contour of the layer

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Attorney Docket No.: FUK-84

of chromium formed via the diffusion thereof along grain boundaries cannot be expected to be the same as a chromium layer formed by a coating procedure. One of ordinary skill in the art would expect that a chromium layer created by coating procedure to be more uniform than a chromium layer formed via a diffusion process already on the metallic material, and that the 5 uniformity achieved in the initial chromium layer would have a direct effect on the uniformity in a resulting oxidized version of this layer. Thus, Ohmi '099 does not teach or suggest the present invention as set forth in claim 1, as amended.

For all of the foregoing reasons, Applicants respectfully submit that claim 1 is now in condition for allowance and hereby respectfully request that the rejection based upon Ohmi 10 '099 be withdrawn.

Responsive to the rejection of claims 1 and 2 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,248,676 (Uchida et al.) in view of Ohmi '099, Applicants have amended claim 1 and respectfully submit that claims 1 and 2 are now in condition for allowance.

15 Claim 1, as amended, recites in part:

...a passivation film consisting of chromium oxide obtained by oxidizing a chromium coat on the metallic material...

Applicants submit that such an invention is neither taught, disclosed, nor suggested by Uchida 20 et al '676, Ohmi '099, or any of the other cited references, alone or in combination.

Uchida et al '676 discloses a surface treatment of steel plates or sheets in which the steel sheet is first coated with a metallic chromium layer and is then electrolytically plated with a chromate film. As such, Uchida '676 does not disclose or suggest either oxidizing the metallic chromium layer to thereby create a chromium oxide layer or even the direct oxidation of the

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Attorney Docket No.: FUK-84

steel plate surface itself. In fact, one of ordinary skill in the art would understand that a chromate layer formed via an electroplating process would have a significantly different microstructure than an oxidized layer of chromium.

Uchida et al '676 further indicates that the positioning of a chromium layer between the steel plate and the chromate film produces a steel plate having excellent corrosion resistance. It is disclosed that the metallic chromium layer acts as a strong protecting barrier against corrosion, preventing corrosion even if an acidic liquid should penetrate through the chromate film. Additionally, according to Uchida et al, the metallic chromium film enhances the adherence between the chromate film and the steel surface. Thus, not only does Uchida et al '676 not disclose or suggest the formation of a chromium oxide layer directly on the steel surface, it actually teaches away from modifying the chromium film in any way prior to or subsequent to formation of the chromate film thereupon (MPEP § 2143.01).

Ohmi '099 does disclose forming on a stainless steel surface an oxide passivation film consisting of mainly chromium oxide. The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the chromium oxide as a passivation film as taught by Ohmi '099 in Uchida et al '676 because of the improved corrosion resistance gained by using a layer consisting of only chromium oxide. However, modifying Uchida et al '676 in such a manner would render Uchida et al '676 unsatisfactory for its intended purpose. Specifically, a combination of a metal chromium layer in conjunction with a chromate film would no longer be used to provide corrosion resistance for a steel plate. Furthermore, such a change would definitely change the principle of operation of the base reference Uchida '676. (MPEP § 2143.01.) Thus, it would not have been obvious to one of

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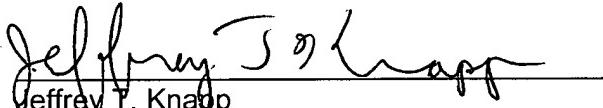
Attorney Docket No.: FUK-84

ordinary skill in the art to modify Uchida '676 with Ohmi '099 to arrive at the subject matter of claim 1.

For all the foregoing reasons, Applicants submit that claim 1, and claim 2 depending therefrom, are now in condition for allowance and hereby respectfully request that the rejection thereof based upon Uchida '676 in view of Ohmi '099 be withdrawn.

If the Examiner has any questions or comments that would speed prosecution of this case, the Examiner is invited to call the undersigned at 260/485-6001.

Respectfully submitted,


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Encs: Amendments to the Claims
(1 Sheet; p. 6)
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450, on: November 25, 2003.

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November 25, 2003
Date